

# Notice of Allowability

Application No.

09/703,545

Examiner

Ling-Siu Choi

Applicant(s)

ESTRADA, JESUS VELA

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to the Response filed November 28, 2003.
2. ☐ The allowed claim(s) is/are 1,2,4-6 and 9-21.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
  - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

- |   |   |
|---|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No. _____  | 7 <input type="checkbox"/> Examiner's Amendment/Comment                             |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|   | 9 <input type="checkbox"/> Other  |

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**DETAILED ACTION**

1. This Office Action is in response to the Amendment filed November 28, 2003. Claims 3, 7, 8, and 22 were canceled and claims 1-2, 4-6, and 9-21 are now pending.

***Allowable Subject Matter***

2. Claims 1-2, 4-6, and 9-21 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest reference: Zboril et al. (US 5,589,555).

The present invention relates to a process to prepare a catalyst for olefin polymerization, the process comprising **sequentially mixing of**

mixing	(i) a mixture of $(R^1)_2Mg + Al^1(R^2)_3$
	(ii) a solution of HCl or $R^3Cl$
maintaining the mixture at a temperature from 30°C to 40°C for 10-40 seconds	
rapidly adding	(iii) a solution of $(R^4)_aTiCl_{b-a}$
resulting mixture: $Mg / Al^1 = 3-8$ ; $Cl / Mg = 1.5-2.5$ ; $Al^1 / Ti = 0.5-1.5$ ; $Mg / Ti = 3-8$ bringing the resulting mixture to 130-160°C in less than 20 seconds	
further mixing with	(iv) $(R^5)_2Al^2(R^6)$

(summary of claim 1)

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Zboril et al. disclose a process to prepare a catalyst for olefin polymerization, wherein the catalyst comprises a catalyst precursor and a catalyst activator, the catalyst precursor being prepared by the in-line mixing of (a)  $\text{MgR}^1_2$  and  $\text{AlR}^2_3$ , (b) a reactive halide which can be tert butylchloride, and (c) titanium tetrachloride at a temperature of less than  $30^\circ\text{C}$ , wherein  $\text{X/Mg} = 2.2\text{-}2.4$ ;  $\text{Mg/Ti} = 5$ ;  $\text{Al/Ti} = 0.9$ ;  $\text{Mg/Al} = 5.6$ , and the catalyst activator being  $\text{AlR}_3$  (col. 2, lines 46-53; Examples 1-2; claim 1). However, Zboril et al. do not teach or fairly suggest a process comprising (a) stepwise addition steps and (b) a hold up time for mixing the first and second component being 10-40 seconds at a temperature of  $30\text{-}40^\circ\text{C}$ . In view of the data shown on Table 1 ( page 17), the catalyst prepared in the claimed range of the hold up time has higher catalyst activity.

hold up time (seconds)	catalyst activity
10	672
20	745
40	643
60	477

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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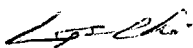
fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is (703)305-0887.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on (703)308-2450.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703)308-2351.



Ling -Siu Choi

January 7, 2004